

The Claims

1-7. (Canceled).

8. (Original) A method comprising:

receiving a request to play an audio file;

determining whether volume normalization parameters associated with the audio file are stored in a media library;

if the volume normalization parameters associated with the audio file are stored in the media library:

retrieving the volume normalization parameters from the media library;

playing the audio file using the volume normalization parameters;

if the volume normalization parameters associated with the audio file are not stored in the media library:

determining whether volume normalization parameters associated with the audio file are stored in the audio file;

if the volume normalization parameters associated with the audio file are stored in the audio file:

retrieving the volume normalization parameters from the audio file;

playing the audio file using the volume normalization parameters;

if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, calculating volume normalization parameters while playing the audio file.

9. (Original) A method as recited in claim 8 wherein if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, saving the calculated volume normalization parameters in the media library.

10. (Original) A method as recited in claim 8 wherein if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, saving the calculated volume normalization parameters in the audio file.

11. (Original) A method as recited in claim 8 wherein the volume normalization parameters include a peak volume level associated with the audio file.

12. (Original) A method as recited in claim 8 wherein the volume normalization parameters include an average volume level associated with the audio file.

13. (Currently amended) One or more computer storage media
~~computer-readable memories~~ containing a computer program that is executable by
a processor to: ~~perform the method recited in claim 8~~

receive a request to play an audio file;

determine whether volume normalization parameters associated with the
audio file are stored in a media library;

if the volume normalization parameters associated with the audio file are
stored in the media library:

retrieve the volume normalization parameters from the media
library;

play the audio file using the volume normalization parameters;

if the volume normalization parameters associated with the audio file are
not stored in the media library:

determine whether volume normalization parameters associated with
the audio file are stored in the audio file;

if the volume normalization parameters associated with the audio file
are stored in the audio file:

retrieve the volume normalization parameters from the audio
file;

play the audio file using the volume normalization
parameters;

if the volume normalization parameters associated with the audio file are
not stored in the media library and are not stored in the audio file, calculate
volume normalization parameters while playing the audio file.

14. (Currently amended) A method comprising:

receiving a request to play an audio file;

identifying a mapping function associated with the audio file, wherein the mapping function includes a first portion and a second portion, and wherein the second portion of the mapping function is a quadratic equation and the first portion of the mapping function is a linear equation;

applying the first portion of the mapping function to audio data in the audio file when the amplitude of the audio data does not exceed a threshold value; and

applying the second portion of the mapping function to audio data in the audio file when the amplitude of the audio data exceeds the threshold value.

15. (Canceled).

16. (Original) A method as recited in claim 14 wherein applying the first portion of the mapping function to audio data in the audio file changes the amplitude of the data played from the audio file.

17. (Original) A method as recited in claim 14 wherein applying the second portion of the mapping function to audio data in the audio file changes the amplitude of the data played from the audio file.

18. (Original) A method as recited in claim 14 wherein applying the first portion of the mapping function and applying the second portion of the mapping function produce a substantially constant audio data volume.

19. (Original) One or more computer storage media ~~computer-readable memories~~ containing a computer program that is executable by a processor to: ~~perform the method recited in claim 14~~

receive a request to play an audio file;

identify a mapping function associated with the audio file, wherein the mapping function includes a first portion and a second portion, and wherein the second portion of the mapping function is a quadratic equation and the first portion of the mapping function is a linear equation;

apply the first portion of the mapping function to audio data in the audio file when the amplitude of the audio data does not exceed a threshold value; and

apply the second portion of the mapping function to audio data in the audio file when the amplitude of the audio data exceeds the threshold value.

20-43. (Canceled).

44. (New) One or more computer storage media as recited in claim 13 wherein the computer program is further executable to, if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, save the calculated volume normalization parameters in the media library.

45. (New) One or more computer storage media as recited in claim 13 wherein the computer program is further executable to, if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, save the calculated volume normalization parameters in the audio file.

46. (New) One or more computer storage media as recited in claim 13 wherein the volume normalization parameters include a peak volume level associated with the audio file.

47. (New) One or more computer storage media as recited in claim 13 wherein the volume normalization parameters include an average volume level associated with the audio file.

48. (New) One or more computer storage media as recited in claim 19 wherein application of the first portion of the mapping function to audio data in the audio file changes the amplitude of the data played from the audio file.

49. (New) One or more computer storage media as recited in claim 19 wherein application of the second portion of the mapping function to audio data in the audio file changes the amplitude of the data played from the audio file.

50. (New) One or more computer storage media as recited in claim 19 wherein application of the first portion of the mapping function and application of the second portion of the mapping function produce a substantially constant audio data volume.

51. (New) A computer comprising:
a processor; and
computer storage media to store instructions that are executed by the processor to cause the processor to:

receive a request to play an audio file;

determine whether volume normalization parameters associated with the audio file are stored in a media library;

if the volume normalization parameters associated with the audio file are stored in the media library:

retrieve the volume normalization parameters from the media library;

play the audio file using the volume normalization parameters;

if the volume normalization parameters associated with the audio file are not stored in the media library:

determine whether volume normalization parameters associated with the audio file are stored in the audio file;

if the volume normalization parameters associated with the audio file are stored in the audio file:

retrieve the volume normalization parameters from the audio file;

play the audio file using the volume normalization parameters;

if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, calculate volume normalization parameters while playing the audio file.

52. (New) A computer as recited in claim 51 wherein the instructions are further executed by the processor to cause the processor to, if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, save the calculated volume normalization parameters in the media library.

53. (New) A computer as recited in claim 51 wherein the instructions are further executed by the processor to cause the processor to, if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, save the calculated volume normalization parameters in the audio file.

54. (New) A computer as recited in claim 51 wherein the volume normalization parameters include a peak volume level associated with the audio file.

55. (New) A computer as recited in claim 51 wherein the volume normalization parameters include an average volume level associated with the audio file.

56. (New) A device comprising:

- means for receiving a request to play an audio file;
- means for determining whether volume normalization parameters associated with the audio file are stored in a media library;
- means for, if the volume normalization parameters associated with the audio file are stored in the media library:
 - retrieving the volume normalization parameters from the media library;
 - playing the audio file using the volume normalization parameters;
- means for, if the volume normalization parameters associated with the audio file are not stored in the media library:
 - determining whether volume normalization parameters associated with the audio file are stored in the audio file;
 - if the volume normalization parameters associated with the audio file are stored in the audio file:
 - retrieving the volume normalization parameters from the audio file;
 - playing the audio file using the volume normalization parameters;

means for, if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, calculating volume normalization parameters while playing the audio file.

57. (New) A device as recited in claim 56 further comprising means for, if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, saving the calculated volume normalization parameters in the media library.

58. (New) A device as recited in claim 56 further comprising means for, if the volume normalization parameters associated with the audio file are not stored in the media library and are not stored in the audio file, saving the calculated volume normalization parameters in the audio file.

59. (New) A device as recited in claim 56 wherein the volume normalization parameters include a peak volume level associated with the audio file.

60. (New) A device as recited in claim 56 wherein the volume normalization parameters include an average volume level associated with the audio file.

61. (New) A computer comprising:
a processor; and

computer storage media to store instructions that are executed by the processor to cause the processor to:

receive a request to play an audio file;

identify a mapping function associated with the audio file, wherein the mapping function includes a first portion and a second portion, and wherein the second portion of the mapping function is a quadratic equation and the first portion of the mapping function is a linear equation;

apply the first portion of the mapping function to audio data in the audio file when the amplitude of the audio data does not exceed a threshold value; and

apply the second portion of the mapping function to audio data in the audio file when the amplitude of the audio data exceeds the threshold value.

62. (New) A computer as recited in claim 61 wherein application of the first portion of the mapping function to audio data in the audio file changes the amplitude of the data played from the audio file.

63. (New) A computer as recited in claim 61 wherein application of the second portion of the mapping function to audio data in the audio file changes the amplitude of the data played from the audio file.

64. (New) A computer as recited in claim 61 wherein application of the first portion of the mapping function and application of the second portion of the mapping function produce a substantially constant audio data volume.

65. (New) A device comprising:
means for receiving a request to play an audio file;
means for identifying a mapping function associated with the audio file,
wherein the mapping function includes a first portion and a second portion, and
wherein the second portion of the mapping function is a quadratic equation and the
first portion of the mapping function is a linear equation;
means for applying the first portion of the mapping function to audio data
in the audio file when the amplitude of the audio data does not exceed a threshold
value; and
means for applying the second portion of the mapping function to audio
data in the audio file when the amplitude of the audio data exceeds the threshold
value.

66. (New) A device as recited in claim 65 wherein application of the
first portion of the mapping function to audio data in the audio file changes the
amplitude of the data played from the audio file.

67. (New) A device as recited in claim 65 wherein application of the
second portion of the mapping function to audio data in the audio file changes the
amplitude of the data played from the audio file.

68. (New) A device as recited in claim 65 wherein application of the first portion of the mapping function and application of the second portion of the mapping function produce a substantially constant audio data volume.